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Pay for performance for specialised care in England: Strengths and weaknesses*

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ABSTRACT

Pay-for-Performance (P4P) schemes have become increasingly common internationally, yet evidence of their effectiveness remains ambiguous. P4P has been widely used in England for over a decade both in primary and secondary care. A prominent P4P programme in secondary care is the Commissioning for Quality and Innovation (CQUIN) framework. The most recent addition to this framework is Prescribed Specialised Services (PSS) CQUIN, introduced into the NHS in England in 2013. This study offers a review and critique of the PSS CQUIN scheme for specialised care. A key feature of PSS CQUIN is that whilst it is centrally developed, performance targets are agreed locally. This means that there is variation across providers in the schemes selected from the national menu, the achievement level needed to earn payment, and the proportion of the overall payment attached to each scheme. Specific schemes vary in terms of what is incentivised – structure, process and/or outcome – and how they are incentivised. Centralised versus decentralised decision making, the nature of the performance measures, the tiered payment structure and the dynamic nature of the schemes have created a sophisticated but complex P4P programme which requires evaluation to understand the effect of such incentives on specialised care.

1. Policy background

Pay-for-Performance (P4P) programmes link financial payments by funders to quality of care supplied by healthcare providers. They are increasingly common across OECD countries such as the United States, Australia, Japan and European countries [1,2]. Quality is usually assessed using measures of clinical processes judged to represent best practice (e.g. medication reviews) or using outcomes (e.g. risk-adjusted readmission rates). The intention is that improvements against these quality metrics will ultimately translate into improved health. The programmes are heterogeneous across countries and evidence regarding their effectiveness remains ambiguous, with a subset of schemes showing moderately positive effects [1–7].

P4P has been widely used by the English National Health Service (NHS) for over a decade. The NHS introduced the Quality and Outcomes Framework (QOF) within primary care in 2004 [8], followed by Advancing Quality within secondary care in 2008 [9] and Best Practice Tariffs in 2010 [10]. The Advancing Quality scheme was introduced in one region for patients with five conditions, and subsequently integrated into a national scheme known as the Commissioning for Quality and Innovation (CQUIN) framework in 2009/10 [11].

CQUIN covers NHS providers of acute, community, mental health and ambulance services. A proportion of provider income depends on performance on a set of indicators that are intended to stimulate quality and innovation. Unlike previous P4P schemes in England where bonus payments were made for meeting targets, a proportion of contract payment is withheld under CQUIN schemes unless quality indicators are met. CQUIN therefore does not involve additional funding. If quality targets are not achieved, a provider's

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budget is reduced. An initial feature of the scheme was that indicators and targets were locally agreed between commissioners and providers, rather than set nationally [12] although since 2010/11 a mandatory national element was introduced. The local design feature has disappeared over time partly in response to an earlier evaluation [13].

In 2012 England introduced the Health and Social Care Act [14,15] and responsibility for commissioning healthcare was transferred to newly formed bodies. Commissioning responsibility for emergency, elective, and community care was transferred to local Clinical Commissioning Groups (CCGs). Responsibility for commissioning 143 so-called 'specialised services' was placed with the national body, NHS England [16]. Since then, the national CQUIN framework includes two schemes: CCG-CQUIN schemes which cover care commissioned by local CCG purchasers; and Prescribed Specialised Services (PSS) CQUIN schemes which cover specialised services commissioned nationally by NHS England but managed locally by commissioning teams (hubs). The CCG-CQUIN has been reviewed elsewhere [13,17]. Here we focus on the newer PSS-CQUIN schemes for specialised services, launched in 2013 with the aim of improving the quality of specialised care and achieving value for money.

2. The CQUIN programme for Prescribed Specialised Services

2.1. What are specialised services?

Specialised services are provided by relatively few hospitals to support people with rare and complex conditions, including rare cancers and genetic disorders. They include a wide range of treatments from chemotherapy and kidney dialysis to inpatient mental health care and surgical procedures like stem cell transplants [18].

Specialised services are delivered by qualified teams working predominantly in teaching hospitals, large and specialist providers [19]. The budget for specialised services in England was £14.6 billion or 14.4% of NHS England budget in 2015/16 [19] and increased to £16.6 billion in 2017/18 [20,21].

Commissioning responsibility for specialised services is separate because of technological knowledge required and the financial risk. There are four factors that determine whether NHS England commissions services as specialised [22,23]: the individuals who require the service; its cost; workers ability to provide the service; and financial implications for local purchasers.

2.2. Contractual arrangements

The PSS-CQUIN for specialised services links a proportion of provider income to the achievement of quality improvement and innovation goals. A key feature of the PSS-CQUIN is that whilst incentive schemes and indicators are centrally developed by NHS England, performance targets are locally agreed between each provider and regional NHS England commissioning hubs. This differs from the original design of CCG-CQUIN for non-specialised services where schemes and targets were locally agreed [17].

In its central development, NHS England draws up a national menu of PSS-CQUIN schemes to be selected from. There are multiple incentive schemes for each clinical area (known as a Programme of Care), defined by the improvement they aim to achieve. For example, within internal medicine there is a "reducing cardiac surgery non-elective inpatient waiting" scheme (IM1 in 2016/17), and "CABG within seven days of an angiogram or within seven days of transfer to a non-elective pathway" is the measure employed [24]. NHS England commissioners then negotiates annual contracts with each provider, and propose a selected package of schemes from this national menu to form part of this contract.

When selecting a PSS-CQUIN package, there are three elements which can differ across providers: a) the schemes selected from the national menu, b) the target achievement required to earn the payment, and c) the proportion of overall PSS-CQUIN payment attached to each scheme.

NHS England commissioners select schemes from the national menu that are applicable to a provider where there is significant opportunity for improvement, prioritising schemes judged to represent best value. The target is set based upon providers' current performance to represent attainable targets. The proportion of total payment for each scheme is calculated using an algorithm based on costs and value in addition to the service size and overall specialised service contract size. In total, 2.5% of the contract value for specialised services for each provider is linked to these PSS-CQUIN incentive metrics.

A provider is then free to accept or reject the PSS-CQUIN offered by the commissioner, forfeiting the 2.5% contract value for specialised care if they fail to accept it (i.e. funds are withheld and provider's budget is reduced). At first, payments were agreed on each year, but since April 2017 contracts run for two years. Schemes can be rolled forward for another contracting round, but incentives are intended to be short-term interventions. Metrics are incentivised in the short-term to encourage activity to become embedded in practice, at which point the financial incentives is removed.

The list of schemes included in the PSS-CQUIN has changed over time. At its launch in 2013/14, 27 incentive schemes were included. This increased to 61 in 2014/15 to widen the range of clinical areas. In 2015/16 43 PSS-CQUIN schemes were available, reduced to 26 schemes in 2016/17. They were further revised in 2017/18, including retirement of 10, introduction of 9, expansion and merger of four schemes. Table 1 summarises the schemes in 2016/17 and the two-year period 2017/19, and describes main outcomes and payment.

A provider receives payment when they achieve a target, referred to as "trigger", often assessed quarterly. Triggers are typically incremental or tiered, e.g. (1) establish a working group, (2) team building and training, (3) using the survey instrument to establish a baseline, and (4) activating a response (GE2). Partial payments for proportionally achieving triggers are possible. Most triggers are assessed on an absolute basis (i.e. hospital meets the target) rather than a relative basis (i.e. hospital is amongst top X performers).

In 2016/17 total payments to providers for PSS-CQUIN schemes was £137.84 m (less than target contract value due to non-achievement by some Trusts). Blood and Infection schemes made up the largest payment (£62.58 m), followed by Mental Health schemes (£21.36 m), and General schemes (£21.29 m). Women and Children schemes had the smallest payment (£1.63 m). When examining individual schemes, development of Operational Delivery Networks (ODN) to improve hepatitis-C-virus (HCV) treatment pathways had greatest value with £59 m between 23 providers.

3. What is incentivised and how?

We analysed the content of 26 PSS schemes in 2016/17 using Donabedian's classification of structure, process and outcome [25]. Structure refers to the setting in which healthcare is delivered, such as the adequacy of facilities or qualifications of medical staff. Process focuses on what and how healthcare is delivered. Outcome relates to health outcomes or other policy objectives (such as efficiency). This categorisation is informed by earlier work [26] who reviewed the NHS National Performance Framework.

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Table 1
PSS-CQUIN schemes in 2016/17 and 2017/19.

Programme of care	Scheme	16/17	17/19	Brief description of the expected outcomes	General scheme payment
General Schemes	GE1	x	x	Implement CUR for reduction in inappropriate hospital utilisation	Per provider + per activity
	GE2	x		Use of the PAM survey to improve outcomes	£50,000/provider (>=500 patients)
	GE2		x	Use of the PAM survey to improve outcomes	Existing + new patient groups/provider
	GE3	x		Monitor hand hygiene to reduce healthcare acquired infections	£2,000/bed
	GE3		x	Optimise hospital use of high cost drugs	1% tariff-excluded high cost drugs
	GE4	x		Incentivise appropriate use of cardiac devices to address patients need	1% device expenditure
	GE4		x	Redesign service to adopt most efficient provider service models	Programme costs plus 50%
	GE5		x	Ensure all relevant treatment options are discussed with patients	£60,000/250 patients ± £60/patient
Blood and Infection	BI1	x	x	Improve HCV ODNs	£100,000/net + 1.6% overall CQUIN
	BI2	x		Improve use of Haemtrack patient reporting system at home	Per provider + per patient/quarter above thresholds
	BI2		x	Improve use of Haemtrack patient reporting system at home	£20,000/provider + £2,000/patient
	BI3	x		Incentivise automated exchange transfusions for sickle cell disease	£350/automated transfusion
	BI3		x	Incentivise automated exchange transfusions for sickle cell disease	£420/automated transfusion
	BI4	x		Improve Haemoglobinopathy ODNs	£50,000/provider
	BI4		x	Improve Haemoglobinopathy ODNs	£75,000 to £150,000/provider
Cancer	CA1	x		Improve access for patients with incurable cancer to ESC	£500/patient (<800 patients)
	CA1/IM1		x	Improve access for patients with incurable cancer/HPB to ESC	£600/patient
	CA2	x		Standardise the doses of SACT (19 agents)	0.5% annual chemotherapy spend
	CA2		x	Standardise the doses of SACT (19 old agents and 31 new agents)	1% annual chemotherapy spend
	CA3		x	Optimise decision making for patients with palliative treatment	£35,000 + £40/patient
Internal Medicine	IM1	x		Reduce waiting times for patients referred for CABG	£10,000 + £150/reduced wait day
	IM2	x		Provide direct feedback on compliance with treatment regime	£65,000/site + addition to Sheffield
	IM2		x	Provide direct feedback on compliance with treatment regime	£160,000 to £360,000/provider
	IM3	x		Review cases by MDTs for policy compliance with data flow to registries	£150/patient
	IM3		x	Review cases by MDTs for policy compliance with data flow to registries	£180/patient
	IM4		x	Optimise use of complex Cardiac Implantable Electronic Devices	£100,000 + 2% device expenditure
Trauma	TR1	x		Reduce delayed discharges from adult critical care	Per provider or per baseline patient
	TR2	x		Improve timely access to specialist and pre-empt costly complications	£1,000/patients expected
	TR3	x		Establish MDTs to sanction referrals for surgery, with data entering	£50,000/network + £150/patient
	TR3		x	Establish MDTs to sanction referrals for surgery, with data entering	£60,000/network + £180/patient
Women and Children	WC1	x		Improve asthma control in children within twelve weeks of referral	£31,250/provider
	WC2	x		Implement home monitor to pre-empt costly problems	£2,000/infant
	WC3	x		Apply MH screening for paediatric in-patients with chronic condition	£25/patient for SDQ screening
	WC3		x	Apply MH screening for paediatric in-patients with chronic condition (expanded to include possible CAMHS liaison and questionnaire)	£30/patient for SDQ screening
	WC4		x	Improve utilisation of efficiency of paediatric intensive care beds	£210,000/PICU
	WC5		x	Optimise the use of neonatal care through improve community support	£200,000/Outreach Team
Mental Health	MH1	x		Implement "Sense of Community" in High Secure Wards	£250,000 + £2,500xB + £7,500xC[a]
	MH1		x	Implement "Sense of Community" in High Secure Wards	£300,000 + £3,000xB + £9,000XC[a]
	MH2	x		Deliver education and training courses to complement treatment	£10,000/provider + £2,000/patient
	MH2		x	Deliver education and training courses to complement treatment	£12,000/provider + £2,400/patient
	MH3	x		Develop/implement/evaluate a framework on reduction of restrictive practices	£20,000/provider + £1,200/patient
	MH3		x	Develop/implement/evaluate a framework on reduction of restrictive practices	£24,000/provider + £1,440/patient
	MH4	x		Involve family and carers through a CAMHS journey	£25,000/provider + £1,000/bed
	MH4		x	Remove hold-ups in discharge	X% contract value + CUR costs
	MH5	x		Develop benchmark processes, performance planning, standard setting	£40,000/provider
	MH5		x	Improve transition/discharge young people reaching adulthood	0.5% of expenditure on CAMHS
	MH6	x		Adhere to standards for Gender Identity Clinics	£40,000/provider
	MH7	x		Support woman rapid recovery through involvement of partners	£40,000/provider

Note: CABG: Coronary Artery Bypass Graft; CF: Cystic Fibrosis; CAMHS: Children and Adolescent Mental Health Services; CUR: Clinical Utilisation Review; ESC: Enhanced Supportive Care; HCV: Hepatitis C Virus; HPB: Hepato-Pancreato-Biliary; MDT: Multidisciplinary team; ODNs: Operational Delivery Networks; PAM: Patient Activation Measurement; SACT: Systemic Anti-Cancer Therapy; SDQ: Strengths & Difficulties Questionnaires; SCIC: Spinal Cord Injury Centre.

[a] B = The number of patients in wards included in the partial intervention arms of the trial. C = The number of patients in wards included in the full intervention arm of the trial, see MH1 scheme for details.

As shown in Table 2 two schemes incentivise structure and three incentivise structure and process. The TR3 scheme is an example of incentivising structure. It seeks to establish regional spinal surgery networks, data flows and multi-disciplinary teams (MDT) for surgery patients, effectively changing the setting in which health care is delivered. The evidence to support this scheme came from a spinal network pilot site (although no citation was provided), and the scheme documentation refers to significant savings of £140 m across England for minimal costs of an MDT, citing a cancer MDT costing £110 per patient.

GE1 incentivises structure and process. This scheme focuses on Clinical Utilisation Review (CUR) which promotes the introduction of a clinical decision-support software to identify suitable care according to clinical need. Implementation of CUR can improve efficiency reducing unnecessary length of stays, hospital admissions, bed-days, avoidable discharge delays, unexplained clinical variation and can improve outcomes through patients' experience and satisfaction [27]. The scheme documentation refers to retrospective CUR audits suggesting improvements are possible and international evidence on benefits of CUR software (though no citations are provided). The scheme incentivises structure and process,

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Table 2
What is incentivised in the 2016/17 CQUIN schemes.

Programme of care	Scheme[a]	Structure	Process	Outcome
General Schemes	GE1	X	X	
	GE2		X	
	GE3		X	
	GE4		X	
Blood and Infection	BI1	X	X	
	BI2		X	
	BI3		X	
	BI4	X		
Cancer	CA1		X	
	CA2		X	
Internal Medicine	IM1		X	
	IM2		X	
	IM3	X	X	
Trauma	TR1		X	
	TR2		X	
	TR3	X		
Women and Children	WC1		X	
	WC2		X	
	WC3		X	
Mental Health	MH1		X	
	MH2		X	
	MH3		X	
	MH4		X	X
	MH5		X	
	MH6		X	X
	MH7		X	

[a] See Table 1 for details of the schemes.

with initial payments related to installation and implementation of CUR and further payments related to reductions in bed-days and emergency admissions, and a final payment for reporting to commissioners and stakeholders.

Table 2 suggests that the majority of the schemes incentivised process. For example, the Nationally Standardised Dose Banding Adult Intravenous Systemic Anticancer Therapy (SACT) scheme (CA2) incentivises processes to standardise doses of SACT. Initial payments are made for collection of baseline data and having a Drugs and Therapeutics committee agree and approve principles of dose banding. Subsequent payments are made if dose banding targets, agreed locally, are met. Intended behavioural effects are to improve patient safety and to increase efficiency through reduction in drugs costs and waste. The document for CA2 refers to the use of dose banding in Scotland, and previous attempts in England where savings of £1 m were achieved. As with other schemes no citations are provided to evidence the effect.

Only two PSS-CQUIN schemes in 2016/17 explicitly incentivise outcomes, which are for mental health. One of these (MH4) incentivises good practice with respect to involving families and carers of children and adolescents using mental health services. In addition to incentivising some initial process measures of care, the final payment trigger is based on the proportion of families reporting satisfaction regarding engagement upon child's discharge.

Summary information on the incentivised measures is available in the public domain in providers' annual reports, but the degree of detail varies.

4. Discussion: strengths and weaknesses of PSS CQUIN

We critically assess the PSS-CQUIN scheme, and discuss strengths and weaknesses of the policy's design and implementation.

4.1. Centralised versus decentralised decision making

A key feature of PSS-CQUIN is the mix of centralised and local decision making. Whilst the list of schemes on offer is centrally designed at the national level, the selection of schemes from this menu is negotiated locally, along with performance targets required to earn payment. This approach was taken because local negotiation in the original CQUIN had inhibited effectiveness due to lack of ability to benchmark across providers [13].

The mixed approach has the potential to exploit synergies or scale economies in the development of technical schemes at the central level (therefore saving resources to local commissioners), while accommodating needs and preferences at the local level. Whilst this mixed approach builds on evidence from a previous programme, the nature of specialised services makes these schemes more technical and complex. In turn the greater complexity can weaken behavioural responses if it becomes more difficult for providers to estimate the relationship between effort and reward [28]. One risk from the local nature of negotiations arises if providers have more bargaining power than others generating inequitable targets across providers [29].

Even if the list of schemes is centrally designed, contract negotiations can be resource intensive for both national commissioners and local providers, meaning that the cost of the scheme is larger than the incentive payments and these additional resources need to be included in cost-effectiveness estimates [30, page 8,31].

4.2. Performance measures

Most of incentivised indicators are process measures. This is in line with the literature on P4P, which suggests that linking incentives to process measures is more effective at inducing effort than linking incentives directly to outcomes [2,3,32]. Providers have more direct control of process, while health outcomes may reflect external factors. Appropriate risk-adjustment may be more difficult to develop in the context of specialised care.

Efforts to document that the incentivised process measures are evidence-based represents an improvement on the original CQUIN scheme. However, while PSS-CQUIN schemes documentation have "Supporting Guidance and References" it is difficult to judge the quality of the evidence because citations are often missing. Without sources it is not always clear why specific quality indicators were chosen, and if there is evidence linking intermediary processes with health improvements.

Several indicators are structure measures rewarding providers for investing in specific areas. A weakness is that there may be even less evidence to document how structure translates into better processes and outcomes. Nevertheless, for specialised care there may be a rationale for paying for structure if there are large fixed costs that are required for innovation, or if it is difficult to identify optimal processes (due to lack of evidence) or reliable process measures [33].

4.3. Payment structure

A tiered payment structure with payments linked to different triggers (thresholds) reduces the financial risk to providers compared to an all-or-nothing target. Additional, more refined triggers are likely to be even more effective at inducing continuous effort improvement [28] but at the cost of additional complexity.

4.4. Rachet effects

Another feature of PSS-CQUIN is its dynamic nature, with the number and type of schemes evolving over time. The advantage is that the scheme is flexible and can divert funds to new areas with potential to improve quality and efficiency. When providers improve performance in line with the incentive design, the scheme can be withdrawn and contracted as "standard" without incentive payment. However, this introduces

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what is known as the "rachet effect". Since the provider can anticipate that the scheme will be withdrawn, the incentive to improve is weakened. Empirical evidence on incentive withdrawal is mixed. Recent evidence from a long-running primary care pay-for-performance scheme in England found that performance on previously-incentivised quality measures declined immediately once the financial incentives are removed [34]. An earlier study had found that performance remained stable after withdrawal, although in that instance clinically-linked incentives remained active [35]. Short-term incentives provided by PSS-CQUIN may fail to induce long-term improvements. To mitigate this, PSS-CQUIN schemes have an 'Exit Plan', which acknowledges how the change and performance requirements can be sustained once an indicator is retired. These include reworking tariff payments, developing appropriate tariff codes or an explicit recognition that a scheme is self-sustaining if it provides cost-savings.

4.5. Amount paid

The size of PSS-CQUIN incentive payments are set to reflect typical provider costs with an additional incentive payment of 25% increasing to 50% in 2017/19. Still, this payment could be below the optimal price, which has been shown to depend on the marginal benefit of health gains, provider motivation and opportunity costs of public funds [36]. The effect of incentive size on positive outcomes remains uncertain, with two systematic reviews providing conflicting conclusions [3,6].

4.6. Penalties vs. bonuses

A defining feature of the scheme is that it relies on withholding funds rather than bonus payments. This implies that if a provider does not achieve its targets it will not receive the full expected budget, and may be unable to cover costs. The scheme thus represents an example of a "non-payment" scheme and can be viewed as a penalty when the initial payment scheme is the reference point [37,38]. Penalty schemes have been highlighted as potentially cost-effective [39]. Although behavioural economics suggests that penalties are perceived as higher-powered relative to bonus schemes, this hypothesis is derived from loss-aversion theory and only supported by evidence at an individual level. Little is known about how penalties affect large organisations, which are arguably less risk averse [37].

Like other P4P schemes, PSS-CQUIN schemes could be subject to other potential unintended consequences, such as gaming and effort diversion to unincentivised care.

5. Conclusion

Substantial work has been undertaken to design PSS-CQUIN schemes and metrics for specialised care. Whilst this scheme could be transferred to other countries, potential implementers need to be aware of the following issues.

Although uncertainties about the scheme reflect uncertainties on the effectiveness of P4P more broadly, the complexity of specialised care requires significant specific investments including linking the performance measures to evidence base, and not every country may be able/willing to afford such investments. Such investments may justify a centralised approach to develop performance measures that exploit synergies and scale economies.

The complexity of specialised care also makes the development of health outcome measures more difficult, justifying a focus on process measures, and rewarding providers for improvement over time rather than across providers though this approach is vulnerable to rachet effects.

P4P for specialised care remains rare and future evaluation of PSS-CQUIN will contribute to the evidence base.

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